Amendments to the Specification:

Please replace the paragraph beginning at page 1, line 23 with the following rewritten paragraph:

Electrosurgery refers to surgical procedures that pass high frequency, alternating electrical current through body tissues to cut or coagulate the tissues. Electrosurgical instruments or tools such as electrosurgical electrodes are used in these surgical operations to cut, coagulate and cauterize the tissue of a patient. The electrodes conduct the high frequency alternating electrical current from a generator to the patient to perform these operations. The generator is the source of the electricity for the surgical procedure. Because standard electrical current alternates at a frequency of sixty cycles per second (60 Hz), which could cause excessive neuromuscular stimulation and possibly electrocution if used, the generator takes sixty cycle current and increases the frequency to over 300,000 cycles per second (300,000 Hz). At this frequency, the electrical energy can pass through the patient with minimal neuromuscular stimulation and no risk of electrocution. Additionally, the generators are able to produce a variety of electrical waveforms. A constant waveform, which produces heat very rapidly, is generally used to vaporize or cut body tissue. An intermittent waveform produces less heat and is generally used to coagulate body tissue. Several different waveforms may <u>be</u> used in an electrosurgical procedure to achieve different effects.

Please replace the paragraph beginning at page 5, line 8 with the following rewritten paragraph:

Once the surface of the substrate is cleaned, a layer of a wet bonding material such as a primer is applied to the surface of the substrate. The wet bonding material may include one or more additives which change or enhance one or more characteristics of the wet bonding material. For example, in one embodiment, the wet bonding material includes an ultraviolet light cure resin. In another embodiment, the wet bonding material includes an electron beam cure resin. It should also be appreciated that the bonding material may be any suitable bonding material or agent. The bonding material layer is formulated to also improve the bonding capabilities of the subsequent coating layer or layers applied to the surface of the substrate in addition to retaining the particles. The layer of wet bonding material is preferably applied uniformly so as to avoid forming a thick layer, which is thicker than what is necessary or required, and avoid drippings which may detract from the bonding ability to the substrate.

Please replace the paragraph beginning at page 8, line 24 with the following rewritten paragraph:

In another embodiment, specially treated, uniform plastic particles are applied to a surface of a substrate. The plastic particles can be pre-treated PTFE, ultra high molecular weight polyethylene (UHMW) and/or PE or another suitable material ~~and~~ are applied to the wet bonding material on the surface of the substrate. The particles are irradiated or processed with an electron beam which causes changes to the surface of the particles, allowing them to wet more easily and to sink into the wet bonding material layer, instead of remaining on the top of the material bonding layer. Therefore, the plastic particles are strongly bonded to the layer and not easily dislodged from the surface. This process thereby enables the plastic particle layer to last longer.

Please replace the paragraph beginning at page 11, line 14 with the following rewritten paragraph:

In another embodiment, a wet bonding material layer including relatively small particles of a suitable low friction or soft material is first applied to the surface of a substrate. Next, a layer of uniform hard dry particles or other suitable hard particles is applied to the wet bonding material layer. Another layer of the initial wet bonding material mixture including the relatively smaller particles is then applied to the dry particle layer. The layers are dried using a suitable drying or curing process, which causes the top layer or second wet bonding material layer including the small soft particles to shrink and distribute the small soft particles amongst the hard ~~bronze~~ particles. This creates an abrasion resistant and low friction surface.

Please replace the paragraph beginning at page 21, line 17 with the following rewritten paragraph:

A further advantage of the present invention is to provide a coating underlayment apparatus and method which significantly reduces ~~capitol~~ capital equipment costs, operation costs and process complications.

Please replace the paragraph beginning at page 28, line 17 with the following rewritten paragraph:

Referring to Figs. 1E to 1J, different types of particles and different combinations of particles may be applied to the wet bonding material layer on the surface of the substrate. In Fig. 1E, different densities of spherical particles 106c are applied to the wet bonding material layer. In Fig. 1F, different densities of flake-shaped particles 106d are applied to the wet bonding material layer. ~~In Fig. 1F, different densities of flake-shaped particles 106d are applied to the wet bonding material layer.~~ In Fig. 1G, different densities of fiber particles 106e are applied to the wet bonding material layer. In Fig. 1H, different densities of a combination of spherical particles 106c and flake-shaped particles 106d are applied to the wet bonding material layer. In Fig. 1I, different densities of a combination of spherical particles 106c and fiber particles 106e are applied to the wet bonding material layer. In Fig. 1J, different densities of a combination of flake-shaped particles 106d and fiber particles 106e are applied to the wet bonding material layer. It should be appreciated that any suitable combinations of the above particles may be applied to the wet bonding material layer depending on the end-use requirements and specifications.

Please replace the paragraph beginning at page 29, line 3 with the following rewritten paragraph:

The coating underlayment is primarily composed of substantially uniform dry particles, which form a single substantially uniform and substantially even layer on the surface of the substrate or product. In one embodiment where abrasive resistant surfaces are desired, the substantially uniform dry particles may be any suitable size or shape as desired by the manufacturer such as flat-shaped, flake-shaped, angular-shaped, cylindrical-shaped, oblong-shaped and leaf-shaped particles. Specifically, the substantially uniform dry particles are substantially the same in size and shape for several reasons, including so that the coating area or area of adhesion is maximized on the surface of the substrate. In one embodiment shown in Fig~~s~~. 2A~~ and 2B~~, angular particles 206 such as triangular shaped particles are used to create a rough surface on a substrate by applying the angular particles to the bonding material layer 204 on the surface of the substrate 202. In another embodiment, softer, less abrasive surfaces are created by using shaped particles such as spherical shaped particles. In a further example described in more detail below, combinations of different shaped particles are used on a surface of a substrate as shown in Figs. 3A and 3B. Thus, uniformly sized or shaped particles or different sized or shaped particles may be applied to a surface of a substrate.

Please replace the paragraph beginning at page 31, line 3 with the following rewritten paragraph:

Referring to Fig. 4, one embodiment of the method of applying the coating underlayment to form a coated substrate is illustrated in the flow diagram. In the method illustrated in Fig. 4, one or more surfaces to be coated on a substrate are cleaned using a suitable cleaner as indicated in block 400. The cleaner removes a substantial portion of or all of the impurities that may be on the surface of the substrate which may inhibit the adhesion of one or more of the layers to the substrate. The surfaces to be coated may be cleaned manually or mechanically in an automated process. The substrate may be cleaned using any suitable cleaning process such as grit blasting or sandblasting, which slightly roughens and cleans the surface or surfaces of a substrate. Additionally, the substrate may be pre-cleaned in a clean room or similar manufacturing area where the step described in block 400 is not necessary.

Please replace the paragraph beginning at page 33, line 23 with the following rewritten paragraph:

Referring now again to Fig. 4, after the substantially uniform particle layer is applied to the bonding material layer, the layers are cured to strengthen the bond between the uniform dry particle layer and the wet primer layer on the surface of substrate as indicated by block 406. The curing process may be performed by heating the layers at a predetermined temperature or temperatures, air-drying the layers or by utilizing any suitable internal or external curing or cross linking process. In addition, the curing process may use a single or plural package heat cure or air-dry materials, such as polyimide for heat cure applications and acrylics for air-dry applications and two part epoxies for room temperature or U.V. rapid curing. When the substantially uniform dry particle layer has completely~~d~~ adhered or bonded to the bonding material layer, a suitable coating layer is applied to the uniform dry particle layer as indicated in block 408. The coating may be any suitable coating such as a topcoat or final coat material. Examples include corrosive or abrasive resistant coatings, non-stick coatings or low friction coatings and electrically insulative or conductive coatings or combinations thereof.

Please replace the paragraph beginning at page 35, line 16 with the following rewritten paragraph:

In another embodiment, aramid fibers or engineered plastic particles or fibers are applied to a substrate to strengthen the surface of the substrate. The aramid fibers may be any suitable aramid material such as Kevlar®, which is manufactured and sold by the E.I. du Pont de Nemours Company. The aramid or Kevlar® fibers are applied to the bonding material layer in very much the same manner as the carbon fibers or whiskers. The Kevlar® fibers or materials can be either a pulp, which includes loose, fluffy fibers which is further ground into a fine powder, or can be other suitable forms such as round particles or semi-round particles. The aramid particles provide non-metallic wear resistance and have good bonding ability with both the basecoat and subsequent topcoats. Thus, the applied aramid fibers or materials create a dense layer of aramid or Kevlar® particles on the surface of the substrate, which is then coated with a topcoat or other suitable final coating. However, if a very high temperature non-metallic or non-ceramic, moderate friction (i.e., low abrasion) surface is desired, a topcoat or final coating is not applied to the layer of aramid fibers as in a brake surface or clutch facing, or a specific high temperature topcoat formulation may be applied as an option.

Please replace the paragraph beginning at page 38, line 24 with the following rewritten paragraph:

In another embodiment, porous metal particles such as the bronze particles described above are impregnated or infused with a material such as PTFE, which lowers the friction of the particles. In one aspect of this embodiment, bronze particles defining or including seventy percent voids (i.e., air) is vacuum impregnated with a suitable material such as PTFE. In another aspect of this embodiment, the bronze particles are soaked with the PTFE and the<u>n</u> dried. The latter process leaves partial voids in the particles where the particles are approximately forty percent solids. It should be appreciated that any suitable metal or metal alloy or ceramic particle or particles may be used as the base particles. It should also be appreciated that any suitable low friction material such as PTFE, anerobic polyester and UHMW may be used to fill or partially fill the voids.

Please replace the paragraph beginning at page 68, line 12 with the following rewritten paragraph:

It should be appreciated that any suitable non-stick material may be applied to the anti-microbial particles. It should also be appreciated that any other suitable top coating may be applied to the anti-microbial particles. Once the top coating is applied to the anti-microbial particles, the coated electrode is cured in a suitable curing oven, furnace or by a suitable curing method or process as described above. The oven dries, sinters or cures the coated electrode and thereby enhances the adhesion of the coatings on the electrode, which causes the coatings and dry anti-microbial particles to adhere to the surface of the electrode 1102. In this embodiment, the top coating is applied to the electrode so that at least a portion of the anti-microbial particles are exposed at the surface of the coated electrode 1102. Additionally, the top coating is not applied to the anti-microbial particles underneath at least a portion of the insulative material. This fully exposes the anti-microbial particles underneath this portion of the insulative material and prevents harmful organisms from getting underneath the insulative material and growing or cultivating. Both the coating on the electrode and the fully exposed anti-microbial particles underneath the insulative material minimizes and/or prevents bacteria and other harmful organisms from remaining and growing on the surface of the electrode 1102 by killing a substantial portion of these organisms when the organisms come in contact with the anti-microbial particles. It should be appreciated that the anti-microbial particles are uniformly and completely exposed at the surface of the electrode so that any organisms that contact the surfaces of the electrode contact the exposed anti-microbial particles. The coatings may be applied to the surface of the electrode 1102 to a desired thickness 1122 as shown in Fig. 13D. In one embodiment, the primer coating, the anti-microbial particles, and the top coating are repeatedly applied to the surface of the electrode until a designated or desired thickness is achieved. After the desired thickness is achieved, the coated electrode is at least partially cured in a suitable curing oven. It should be appreciated that any suitable number of coatings may be applied to the surface of the electrode. It should also be appreciated that any suitable mixture or combination of coatings such as multiple

powdered coatings including PTFE, MFA, anti-microbial coatings or any other suitable coatings may be applied to the surface of the electrode.